

Enhancing *In-Vitro* Shoot Multiplication and Elongation in *Aglaonema unyamanee* Tricolour Using Thidiazuron

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Abstract

Aglaonema unyamanee Tricolour is a monocotyledonous foliage plant with high economic value, mainly propagated through vegetative stem cuttings. Thidiazuron (TDZ) is a synthetic plant growth regulator contributes to enhance micropropagation cycle via shoot multiplication and elongation in aroid plants. However, for *Aglaonema*, the effect of TDZ is unknown. As such, unravelling the TDZ is vital for ornamental plant industry. The objective of this research was to determine the best hormone concentration of TDZ for shoot proliferation and elongation of *Aglaonema*. The explants were derived from matured healthy mother plants and obtained inter-nodal segments (1cm long), then were surface sterilized and introduced into full-strength MS media. The cultures were incubated at $26 \pm 2^\circ\text{C}$ under 16 h daily illuminations with white fluorescent light. After one month, newly developed clean shoots were taken to transfer into treatment media. Here, five concentration of TDZ viz 0.0mg/L (T1, Control), 1.0mg/L (T2) 1.5mg/L (T3), 2.0mg/L (T4) and 2.5mg/L (T5) were introduced. Then the cultures were incubated at $26 \pm 2^\circ\text{C}$ under 16 h daily illuminations with white fluorescent light. Our results indicated that, a concentration of 1.50 mg/l of TDZ resulted in the highest shoot length (24mm), while a concentration of 2.5 mg/l led to the highest number of shoots per explant (18) after a 2-week period. The shoot bud production increased with the TDZ concentration, 3.6/plant with 2.5 mg/l, while lowest (1.0) in without TDZ. These initial findings demonstrate that the use of TDZ can effectively enhance both the multiplication and elongation of shoots in *Aglaonema* Tricolour, However, further research is needed based on subculturing practices.

Keywords: *Aglaonema unyamanee*, Micropropagation, MS media, Thidiazuron